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PREPARING FOR THE SYNCHRONIZATION PROCESS: MECHANIZED BATTALION TASK FORCE LEVEL

A Thesis presented to the Faculty of the U.S. Army Command and General Staff College in partial fulfillment of the requirements for the degree

MASTER OF MILITARY ART AND SCIENCE

by

JAMES E. ZANOL, MAJ, USA
B.S., University of Montana, 1978

Fort Leavenworth, Kansas
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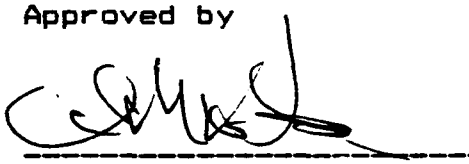

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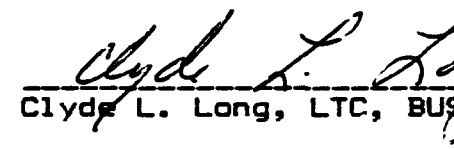

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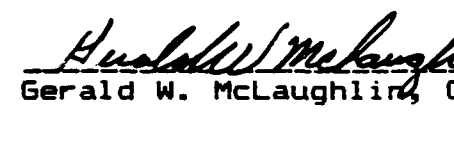

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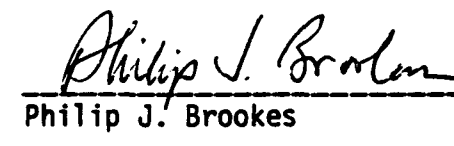

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ABSTRACT

PREPARING FOR THE SYNCHRONIZATION PROCESS: MECHANIZED BATTALION TASK FORCE LEVEL, by Major James E. Zanol, USA, 85 pages.

This study found that FM 71-2, The Tank and Mechanized Infantry Task Force, lacks guidance on how to synchronize task force plans. As a result, battalion commanders and staffs cannot effectively train synchronizing skills. This study recommends training in three areas to correct this problem.

An expert panel of former battalion commanders reviewed these three areas. Answering two surveys, this panel said in their experience sychronized action depends on these skills. Therefore, the panel recommended actions to improve these skills.

The thesis recommends training to improve commander and staff skills. Specifically, the areas for training are: combined arms skills, an integrated IPB, and timely, understood commander's concept. Also, the study recommends the Army publish a training circular on synchronization.

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CHAPTER 1

INTRODUCTION

AirLand Battle became the Army 's warfighting doctrine in 1982. It described future high and mid-intensity battlefields as "chaotic, intense and highly destructive." This environment has a telling effect on command and control. Finding the decisive point on the battlefield becomes harder but more important. Also, it's harder for units to focus combat power at the decisive point.[1] The U.S. Army must use its new doctrine on this complex battlefield.

To meet this challenge, the Army needs three elements: superb leaders and soldiers, well-understood doctrine, and appropriate weapons and supporting equipment. Our leaders combine these elements with tough, realistic training, to change doctrine into combat techniques.[2]

AirLand battle doctrine has four tenets: initiative, agility, depth, and synchronization. Of these, commanders and staffs least understand synchronization. Most realize it's important to synchronize for success, but they can't do it. Our ability to synchronize depends on leader and staff competence.

Significance of Study

Despite the importance of synchronization to success on the AirLand battlefield, our commanders do not seem able to do it. National Training Center (NTC) reports show our inability to synchronize causes losses to opposing forces. From these reports, research has begun to find out why units cannot synchronize the battle.

The Training and Doctrine Command began to study our failure to synchronize. Results reported in the National Training Center Trend Line Analysis, showed little improvement from Fiscal Year 1987 to 1988. Chart 1-1 shows the major reasons for poorly synchronized plans. Significantly, planning tops the list.

CHART 1-1

National Training Center Trend Line Analysis
Causes of poor Synchronization

1987	1988
Inadequate commander/staff planning.	Inadequate commander/ staff planning.
Poor intelligence preparation of the battlefield.	Poor intelligence preparation of the battlefield.
	Poor execution of the reconnaissance and surveillance plan.
Poor Communications.	Inadequate/failure to rehearse.
Failure to rehearse.	Poor land navigation.

Battlefield plans still fail to consider space, time, and relative combat power. Planners usually coordinate mission start time; however, they overlook mission phase, duration, and completion time.[3] In other words, they fail to synchronize.

The Army school system now emphasizes synchronized plans. For example, tactics classes at the Command and General Staff College focus on synchronized plans. However, this is a long term answer. Units need help now to improve training and standard operating procedures.

Research Question

The primary research question is:

What prepares battalion commanders and staffs to synchronize the battlefield operating systems?

To answer this question, this thesis also focused on four subordinate questions:

1. What battlefield operating systems are available to the task force?

2. How are combat activities synchronized in time, space, and purpose?

3. Are there planning factors available in doctrine to help commanders and staffs synchronize combat activities?

4. What are the critical command and staff planning activities that synchronize the battle?

Definitions

This thesis used the following definitions:

Combat activites - Combat activities are tasks, events, one or more procedures reduced to time.[4]

Critical combat activities - A critical combat activity must occur to synchronize the battle.

Battle staff - The task force battle staff includes the coordinating, special and personal staff. They help plan, prepare, and coordinate unit missions.[5] Chart 1-2 lists the staff.

CHART 1-2

Task Force Battle Staff

Executive Officer

Adjutant

Intelligence Officer

Operations Officer

Logistics Officer

Nuclear, Biological, Chemical Officer

Communications and Electronics Officer

Fire Support Officer

Engineer

Air Defense Artillery Officer

Air Liaison Officer

Battlefield operating systems - Combat activities grouped by function.[6] Chart 1-3 shows the seven operating systems.

CHART 1-3

The Battlefield Operating Systems

Command and Control

Fire and Maneuver

Fire Support

Intelligence

Air Defense

Mobility, Countermobility, Survivability

Combat Service Support

Synchronization - Arranging battlefield activities in time, space, and purpose is synchronization. This creates maximum combat power at the decisive point.[7] Purpose is the desired result, the focus of synchronized action.[8]

Technical Skill - Technical skill is knowledge of battlefield operating systems at any command level and throughout the battlefield framework. Technical skill includes knowing how the operating systems relate to other command levels.

Assumptions

This thesis focuses on a tank and mechanized infantry task force. Its employment differs from other combat units. A Soviet combined arms force opposes the task force. The task force can execute tasks to Army standards. Likewise, Soviet forces follow troop control norms. These standards provide basic time factors.

This thesis assumed validity of National Training Center reports. In nearly 10 years, over 150 units have fought close to 1000 battles.[9] National Training Center experience cannot copy combat; however, it's the most realistic battlefield simulation and feedback system available. Therefore, ideas drawn from NTC reports and the Trend Line Analysis are assumed sound and to transfer to other battlefields.

This thesis assumed the command and control operating system produces a synchronized plan. The staff performs the steps in the command and control system.

Limitations

This thesis considers mechanized task force operations. The task force has attachment of resources by doctrine. This thesis does not consider actions of junior commanders or supporting unit leaders.

Research for this study used literature from three primary sources. First, the Combined Arms Research Library (CARL) was the library source. Second, the Center for Army Lessons Learned provided NTC reports. The last source was open materials available on Fort Leavenworth, Kansas. This study used no classified sources.

Summary

This chapter has identified the problem. U.S. Army units do not synchronize their plans and must get better. The next chapter, the literature review, lists three areas

that could help units improve. Chapter Three describes the Delphi technique used to test these three areas with an expert panel. Survey results agree that training in technical skills, IPB, and the commander's concept will help units synchronize. The final chapter recommends training for commanders and staffs.

ENDNOTES

[1] FM 100-5, Operations, HQS, Department of the Army, Washington D. C., p. 1-7.

[2] FM 100-5, p. 1-1.

[3] David A. Fastabend, Fighting by the Numbers: The Role of Quantification in Tactical Decision Making. School of Advanced Military Studies, U.S. Army Command and General Staff College, Ft. Leavenworth, Kansas, p. 12.

[4] Clyde L. Long, Synchronization of Combat Power at the Task Force Level: Defining a Planning Methodology, MMAS Thesis, U. S. Army Command and General Staff College, Ft. Leavenworth, Kansas, p. 47.

[5] William F. Crain, Battle Staff Operations: Synchronization of Planning at Battalion and Brigade Level. MMAS Thesis, U.S. Army Command and General Staff College, Ft. Leavenworth, Kansas, p. 3.

[6] TRADOC Pamphlet 11-9, Blueprint of the Battlefield, HQS, Department of the Army, Fort Monroe, VA, p. 7.

[7] FM 100-5, Operations, HQS, Department of the Army, Washington D.C., p. 17.

[8] Long, p. 46.

[9] Crain, p. 1.

CHAPTER 2

LITERATURE REVIEW

The literature review examined military literature to find areas important to synchronized plans. The review included several groups of documents.

Doctrinal publications - The primary document for this study was Field Manual 71-2, The Tank and Mechanized Infantry Task Force, which describes employment of tank and mechanized infantry battalion task forces. Other publications included FM 71-1, The Tank and Mechanized Infantry Company Team, and FM 71-3, Armored and Mechanized Infantry Brigade.

Lessons Learned publications - The Center for Army Lessons Learned bulletins provided information derived primarily from observations at the National Training Center.

Professional publications - Army branch journals had many articles on synchronized battalion task force operations written by officers in units. They provide good information on methods of synchronizing plans.

Other unpublished documents - This group consisted of three types. The first type included MMAS theses and advanced Military Studies Program monographs. Second, Tactical Commanders Development Program materials have important information. The last type included studies from Fort Leavenworth agencies.

The subordinate questions guide discussion of the literature.

What battlefield operating systems are available to the task force?

FM 71-2 states that task forces have all seven battlefield operating systems. The task force gains combat power when reinforced by supporting arms. These arms complement and reinforce each other.[1] The task force mission and the brigade commander's concept guides task organization.[2]

Chart 2-1 lists operating systems in the battalion.

CHART 2-1

Battlefield Operating Systems
in the Battalion

Command and control

Maneuver

Fire support

Intelligence

Combat service support

The battalion has capability in all seven systems. However, the capability in air defense and mobility without task organization is very limited. For example, a mechanized infantry platoon carries mines and wire to emplace hasty obstacles. Also, the heavy machine guns on the personnel carriers provide limited air defense. Task organization provides engineers and air defense units,

increasing capability in all seven systems. Also, support relationships enhance fire support, air defense, and engineer assets.

Therefore, task forces will encompass all seven battlefield operating systems. The commander and battle staff must synchronize the activities of each system. They must consider capabilities and limitations of each system in planning. However, FM 71-2 does not provide enough information on the operating systems.

FM 71-2's chapters on offense and defense discuss six operating systems, omitting the command and control system. A separate chapter covers command and control. Unfortunately, these discussions are very general. Other sources provide additional information.

For example, Chart 2-2 lists command and control operating system combat activities.[3] A list like this is available for the other operating systems. These lists do not contain or relate time-distance factors which are critical to the commander and planning staff.

CHART 2-2

Command and Control Operating System

Command and control

Get and communicate information and maintain status.

Communicate information.
- Receive and send mission.
- Receive/send enemy information.
- Receive/send terrain/weather information.
- Receive/send friendly troop information.

Manage means of communications information.
Maintain information and force status.
Store information.
Display information.
Publish/reproduce information.
Distribute information.

Assess situation.

Review current situation.

Analyze mission.
Fuse information.
Evaluate incoming information.

Project future requirements.

Decide on need for action or change.

Determine actions.

Issue planning guidance.
Develop courses of action.
Analyze courses of action.
Compare courses of action.
Select or change course of action.

Direct and lead subordinate forces.

Prepare plans and orders.

Develop and complete plans/orders.

Coordinate support.
Approve orders.
Issue orders.
Provide command presence.

How are combat activities synchronized in time, space, and purpose?

FM 71-2 describes a synchronized plan as "integrating activities to produce the desired result." It lists eight steps the task force staff uses to synchronize their plans.[4]

1. Using clear, concise orders that describe the mission, commander's intent, and assign critical tasks to subordinates.
2. Using the IPB process to determine enemy timelines, names areas of interest, target areas of interest, and task force decision points.
3. Coordinating in detail before and during the battle. The commander must wargame contingencies with the staff and subordinate commanders to ensure that maneuvers and corresponding support are understood, planned, and timed before the battle ....
4. Designating and resourcing the battalion main effort.
5. Coordinating and integrating CS and CSS assets.
6. Rapidly massing combat power to achieve local surprise, mass, and shock effect without lengthy explanations or orders.
7. Planning ... to identify and exploit the opportunities that tactical success will create.
8. Allowing decentralized execution of operations.

These steps describe what must be done but not how to do it. Further, the steps outlined contain many processes which also contain steps. FM 71-2 does not adequately discuss these steps. For example, IPB contain five steps: battlefield area evaluation, terrain analysis, weather analysis, threat evaluation, and threat evaluation. The first three can be completed early in the command and control process by the S2. The last two steps are a function of the commander and the full staff, completed at the end of the command and control process.

"How to" synchronize is in FM 71-2, but it's hard to find. Finding it takes combining information from throughout the manual. Furthermore, the reader must know what he is looking for. The command and control chapter provides most of the information. The following statement

is in the discussion of enemy factors of METT-T:

> The S2 begins the IPB process. ... with the S3 and the commander, he develops probable time guidelines, templates of enemy positions or formations, named areas of interest (NAIs) and target areas of interest (TAIs).[5]

In discussing the METT-T time element the following statements stand out:

> (1) Time is the critical factor in all operations. The commander gets his first indication of time available from the higher headquarters order. Specific considerations of time (and timing) include
>
> * Coordination and planning time.
>
> * Time operation is to commence, and therefore the time available for preparation and reconnaissance.
>
> * Movement times from present positions to sectors, battle positions, or lines of departure.
>
> (2) Other timing considerations ... during the wargaming process and include:
>
> * Rate of closure of a moving enemy force.
>
> * Movement times during the operation (moving from one battle position to another; time from one phase line to the next).
>
> * Timing and duration of preparation fires or smoke.
>
> * Time to complete specific actions during the operation.[6]

In discussing troop leading procedures, the following statements relate to synchronization:

> Step 2. Develop situation and courses of action. Based on the restated mission and commander's guidance, the staff begins planning for the new operation.... Critical information provided includes the S2's initial situation template, the

> combat status of the task force, the availability of support, and recommendations concerning preparations. As early as possible, the task force commander provides his intent, ... his visualization of how the enemy is ... defeated and of the battlefield after the mission ... It is a statement of purpose or intended outcome.
>
> Step 3. Analyze courses of action - wargame.... At task force level, wargaming is a mental process of visualizing each step of the battle, considering task force actions, enemy reactions, and task force counteractions.... Through IPB, the commander and S2 develop a clear picture of the battlefield, the courses of action available to the enemy commander, ... which course of action the enemy will adopt (indicators), ... decision points or lines ... to specify points during friendly or enemy movement that require task force action.... Wargaming often involves the entire staff in planning the use of combat support assets, to include establishing priorities, command and support relationships, assigning targets, and fixing responsibilities.[7]

This statement comes from a section on intelligence preparation of the battlefield:

> IPB is an ... process, which involves both the S2 and S3. Properly conducted during the planning and preparation phase, informal IPB helps the task force commander and staff develop courses of action in the manner most likely to produce success and maintain flexibility and freedom of action.[8]

The foregoing discussion shows how parts of the "how to" synchronize are in FM 71-2. The Army has a manual on the staff planning process, however it also does not include a synchronization process.

FM 101-5, Staff Organization and Operations, is the Army's manual for staff planning. Published in 1984, this manual does not include AirLand battle concepts. As such,

FM 101-5 has no procedures for sychronizing plans. Currently being rewritten, future versions of this manual will include a synchronization process.

Two Master of Military Arts and Science (MMAS) theses identify key aspects of synchronized plans. "Synchronization of Combat Power at the Task Force Level: Defining a Planning Methodology," by MAJ Clyde L. Long is an important work. MAJ Long developed a synchronization matrix for the battalion task force. This matrix helps the commander and staff synchronize activities. Also, this matrix highlights information requirements of the commander and his battle staff. The Command and General Staff College (CGSC) has incorporated this synchronization matrix in its training program.

One of CGSC's courses is The Tactical Commander's Development Program (TCDP) taken by future battalion commanders as part of the Pre-command Course. TCDP uses a process with the synchronization matrix which includes the staff planning process and intelligence preparation of the battlefield. It connects these processes with equipment capabilities and time factors."

An MMAS thesis entitled "Battle Staff Operations: Synchronization of Planning at Battalion and Brigade Level" by MAJ William F. Crain covers information needs. MAJ Crain discusses priority of information available to the task force and identifies some data as more important than other

data for the commander and his staff to synchronize action. MAJ Crain states that time constraints vary the amount of information available to the commander. Therefore, if little time is available the commander and staff must focus on information that is critical to synchronization.

The Center for Army Lessons Learned (CALL) articles provided a wealth of information on how activities are synchronized. Three subjects emerged from the CALL articles that relate to synchronization. Those subjects are: commander and S3 involvement in IPB, the importance of the commander's concept, and combined arms skills.

CALL articles on intelligence preparation of the battlefield stressed involvement of the commander and S3. IPB is a process requiring input from the entire staff. These articles emphasized the link between the event and decisions support templates and the commander's concept. The commander's involvement in the IPB process provides the link between these templates. It also focuses planning and information gathering based on his concept.[19]

Several CALL articles on the battlefield operating systems began by emphasizing the commander's concept. These articles point out the commander starts to synchronize by stating his concept. He must do this early in the planning process to provide the staff focus and a framework for planning.

Combined arms skill is another theme in CALL articles. Staff officers must plan based on specific equipment and employment factors. These articles state that misunderstanding time-distance factors often causes mission failure.

Professional skill has also been the focus of an Army study.[11] This study concludes that officers have poor knowledge of their basic branch. This lack of tactical and technical skill contributes to our inability to synchronize.

Professional journals put similar emphasis on the commander's concept. Timely receipt and understanding of the concept is essential to synchronized actions.[12] For example, a task force engineer emphasized understanding the commander's intent and early participation in the planning process.

Are there planning factors available to help commander's and staff's synchronize combat activities?

The "how to" of synchronizing activities relates directly to planning factors. Operating capabilities of our equipment and the enemy's have time-space relationships. For example, it takes one engineer platoon two hours to emplace a 100 meter square point minefield. Planning factors must cover all seven battlefield operating systems.

However, FM 71-2 provides only general employment factors for the operating systems. This does not support the manual's step of "coordination in detail." The

following excerpt is an example from the offense chapter.

> Tanks. With their combination of mobility, firepower, and armor protection, tanks are the primary mounted assault element of the task force. Tanks ... weight the main attack. Tanks ... support-by-fire missions when their direct fires are needed to support assaults, or if obstacles initially prevent them from assaulting the enemy. .... employed in at least platoon strength. When a reserve is formed, tanks are normally allocated to it.[13]

TCDP has developed battle books of task force planning factors. The TCDP battle book summarizes the nature of finding information:

> The most difficult task facing commanders and staffs in the planning and conduct of tactical operations is being familiar with the myriad of information on tactics, techniques, organizations, capabilities, and weapons and equipment technical data. Part of the problem is that information is in many Field Manuals, Technical Manuals, and other documents.[14]

Appendix A is an extract from the Heavy Task Force Battle Book. This extract shows some of the many planning factors available in numerous documents.

What are the critical command and staff planning activities in synchronizing the battle?

Based on the literature review, this study concludes FM 71-2 does not adequately describe how to synchronize at task force level. From the review however, three factors emerge which are key to synchronization; combined arms skill, staff intelligence preparation of the battlefield, and the commander's concept.

The first factor is combined arms skill. The task force performs tasks that take time to finish. Equipment capabilities and limitations determine how long a task will take. Recall the example of the engineer platoon emplacing a minefield. Our planners must know these time factors to synchronize plans or have a quick reference to speed the planning process. Staffs will not have time to look all factors up in a myraid of books. Therefore, the staff must have expert knowledge of the operating systems of the task force.

Secondly, the entire task force staff must contribute to intelligence preparation of the battlefield. Each staff section plans actions on the battlefield. These actions have related time-distance factors. Also, the staff must consider time-distance factors of all enemy actions. To insure that all activities occur at the right time and place requires input from the entire staff.

Third, synchronized activities need the commander's concept to unify and direct staff planning. The commander must state his concept early in the planning process. His idea of when key activities occur to accomplish his mission sets time relationships.

Summary

This chapter reviewed the military literature to answer the subordinate research questions. These conclusions will provide the basis for answering the research question. The

subordinate questions provide what systems the task force has and their planning factors. Also, the process of synchronization and the critical staff planning steps come from the subordinate questions. All together, this information identifies the preparations necessary for the commander and staff to synchronize the battle.

A series of surveys tested the validity of the conclusions through expert opinion. The methodology in Chapter 3 describes the process used to conduct the surveys.

ENDNOTES

[1] FM 100-5, Operations, HQS, Department of the Army, Washington D.C., p. 25.

[2] FM 71-2, The Tank and Mechanized Infantry Battalion Task Force, HQS Department of the Army, Washington D.C., p. 1-2, 1-3.

[3] TRADOC Pamphlet 11-9, Blueprint of the Battlefield, HQS Department of the Army, Fort Monroe, VA, CH. 1-4. This is an extract of operating systems and subordinate operating systems described in this pamphlet.

[4] FM 71-2, p. 1-6.

[5] FM 71-2, p. 2-12.

[6] FM 71-2, p. 2-13, 2-14.

[7] FM 71-2, p. 2-18, 2-19.

[8] FM 71-2, p. 2-29.

[9] Tactical Commander's Development Program. Synchronization methodology. 1989.

1. Know capabilities and limitations of all friendly and enemy equipment.
2. Identify all activities subordinate within the battlefield operating systems, friendly and enemy, which will occur on the battlefield (tasks which require time).
3. Reduce these activities to time, consider all activities which occur during the planning, preparation and execution phases. Commit these to memory and put in task force battle book
4. Complete IPB up through the situation template and determine the most likely enemy course of action.
5. Develop a concept of operations.
6. Devise and decide on a course of action which addresses initially the most likely enemy course of action.
7. Wargame to develop the event template and to develop branches which address the enemy's other courses of action.
8. Arrange the other activities which support the scheme of maneuver in time and space (fire support, engineer, ADA, CSS, and command and control).
9. Determine the decision points for each major activity requiring advance warning to insure timely execution.
10. Develop a surveillance plan which watches the decision points and reports to the appropriate decision

maker.

11. Execute rehearsal addressing each enemy course of action and each friendly branch.

12. Execute mission.

[10] Combined Arms Training Activity, Ft. Leavenworth, KS. National Training Center Lessons Learned, 1 May 1986, p. 7.

[11] G.M. Sullivan, Leader Development Study, Ft. Leavenworth, KS. 24 Aug 1987.

[12] Greenwalt, R.J., LTC. "Winning engineers at the Training Center." Engineer, July 1988: 25-27. "Bluefor engineers never receive adequate time to prepare defenses. The desire to develop the best plan results in lengthy discussion and wargaming in the TOC, with commander's providing minimal time for defenders to occupy and prepare their defenses....

Somerville, R.J., MAJ. "The basics for good combat engineer multiplication: Lessons for successful engineer operations." Engineer, July 1988: 36-38. "Lesson number one is to always know the commander's intent.... They must be able to explain this concept back to the commander and most importantly to their soldiers.

Engineers cannot be left out of the planning and be expected to perform the mission.... All too often, the commander will have a clear intent as to how he will try to maneuver the enemy forces into the kill zones. Studying the engineer plan, you find the obstacles will not support the plan."

Corpal, P.S., MAJ. "Brigade Top Down Fire Planning and Execution." Field Artillery: A Professional Journal for Red Legs, August 1989: "Again, the most important factor in developing a good fire support plan is the initial integrated planning with the commander, FSO, S2 S3, and engineer.... The most critical portion of the matrix is the commander's intent for fire support. The commander identifies exactly what he expects his indirect fire support assets to accomplish."

Franks, T.R., COL & Tetu, W.J., LTC. "Fire Support Parts and Means." Field Artillery: A Professional Journal for Red Legs, December 1988: 42-47. "...most of fire support's shortcomings are because of 4 key problems: *fires and maneuver aren't synchronized fully, *fires don't always support the maneuver commander's intent, *fires are generally ineffective due to poor target location, the difficulty of hitting a mobile enemy and not massing fires, *fire support coordination and integration are weak and fragmented."

Brown, W.R., LTC. "NTC: Fire Support Trends and Fixes." Field Artillery: A Professional Journal for Red Legs, December 1988: 48-53. "*What fire support assets will be used. *Where they'll be used on the battlefield. *When they'll be used or the trigger event for the execution of fires. *What the intended outcome for each major fire support engagement is."

Cardillo, R.G., CPT. "Commander's Intent and the Field Artillery." Armor, May-June 1989: 45-47. "Commanders must become personally involved in the decision making process of fire support integration.... An effective technique in formulating the commander's intent is to follow troop leading procedures as closely to the letter as possible, while putting emphasis on the commander's wargaming session."

[13] FM 71-2, p. 3-28, 3-29.

[14] Tactical Commander's Development Course, U.S. Army Command and General Staff College, Ft. Leavenworth, KS., Battle Book (Light Maneuver Forces of the Combined Arms Team). 1989.

CHAPTER 3

RESEARCH METHODOLOGY

Introduction

The goal of the methodology was to test the conclusions from the literature review. These conclusions were that combined arms skill, staff intelligence preparation of the battlefield, and the commander's concept needed additional emphasis in training.

Synchronization is a process and result. The process is difficult to quantify while the result is measurable. The methodology had to measure ideas. The Delphi process was the technique used to measure these ideas.

Delphi Technique

The Delphi process uses group judgment to improve information quality through a series of questionnaires. An expert panel first answers several broad questions. Follow up questionnaires use these initial answers to work toward consensus. The process ends when adequate group consensus has been obtained on the topic.[1] Chart 3-1 lists the Delphi technique steps.

CHART 3-1

Delphi Technique Steps

Identify the information desired.

Select and contact respondents.

Select sample size

Develop questionnaire #1.

Analyze questionnaire #1.

Develop questionnaire #2.

Analyze questionnaire #2.

*Develop questionnaire #3.

*Analyze questionnaire #3.

Prepare final report.

The first phase of Delphi process is questionnaire construction. The survey group must understand the focus of the first questionnaire. If not, they may give wrong answers or become frustrated.[2] The focus of the first questionnaire was to identify the important steps in synchronizing task force plans.

Survey group selection was the next step. The Delphi process has participant criteria:

1. Feel personally involved in the problem.
2. Have pertinent information to share.
3. Motivated to participate.
4. Accept that a group judgment will include information they feel is important, which they would not have considered.[3]

The population for this thesis came from the faculty of the Combined Arms Staff Service School. The criteria called for former battalion commanders, executive officers, or operations officers.

Examining this survey group with the Delphi participant criteria, they would feel personal involvement. A battalion commander and his staff would have been actively trying to synchronize. This group could share information, regardless of their success in synchronizing plans. The group's make up of career officers infers motivation. Synchronized planning is central to their profession, particularly as instructors at CAS3.

Survey group size was ten to fifteen. This is large enough with a homogeneous group. Also, it made using the Delphi technique easier.[4] A review of the CAS3 faculty identified eighteen officers that met the criteria. Of these eighteen, nine volunteered to participate. Chart 3-2 show the group data.

CHART 3-2

Survey Population Information

Rank

COL	LTC
3	6

Last Command

Bde	Bn	Co
1	7	1

NTC Experience

1 Brigade commander

1 Forward Support Battalion commander

1 Brigade executive officer

1 Battalion commander

1 Battalion executive officer

4 Officers without NTC experience

Specialities

2 Armor

2 Field Artillery

1 Infantry

1 Aviation

1 Transportation Corps

1 Air Defense Artillery

1 Quartermaster Corps

Execution

The group finished Survey number one in ten days. A copy of Survey number one is at Appendix B. The second questionnaire came from responses from Survey number one. The second questionnaire asked direct questions, narrowing the focus on specific topics. The group completed Survey number two in 15 days. A copy of the second survey is at Appendix B. The survey group had provided enough information, ending the process.

Summary

The survey results provided strong support for the initial conclusion made in Chapter 2. The survey members spoke clearly on the importance of combined arms skill, staff integrated IPB, and the commander's concept to synchronizing activities. Additionally, based on their command experience the members provided useful information on training to get these skills. The next chapter presents and discusses the survey results.

ENDNOTES

[1] Delbecq, A.L., Van de Ven, A.H. & Gustafson, D.H.. Group techniques for program planning: a guide to nominal group and delphi processes. Glenview: Scott, Foresman, and Co. 1975, p. 83.

[2] Delbecq, p. 86.

[3] Delbecq, p. 88.

[4] Delbecq, p. 89.

CHAPTER 4

RESULTS AND DISCUSSION

Delphi Results

The former commanders completing the surveys provided important information on synchronization. This section presents results of both Delphi questionnaires. These questionnaires validated the conclusions drawn from the literature review.

Questionnaire Number One

Question one

Consider the seven battlefield operating systems:

Maneuver
Fire Support
Intelligence
Command and control
Air defense
Mobility, countermobility, survivability
Combat service support

Our doctrine states that the battlefield operating systems must be synchronized in time, space, and purpose. Which battlefield operating system included synchronization as a process?

Responses:

Command and control	4
All operating systems	3
Maneuver	1
*	1

* One member felt that synchronization is not a process. He said synchronization is the result of efforts

to cause all BOS to function. This provides a product of simultaneous effort by each BOS.

The activities of synchronization are in the command and control operating system. Arguably, synchronizing actions includes other operating systems. Intelligence preparation of the battlefield is an excellent example. The critical combat activities that synchronize the battalion plan belong to the commander and his staff. They operate in the command and control operating system.

Question two

Look at the outline of the command and control battlefield operating system:

Acquire/communicate information
Assess situations
Determine actions
Direct and lead subordinates

Which action is most important in the process of synchronization:

Responses:

Acquire/communicate information	4
Assess situations	2
Direct and lead subordinates	1
Determine actions	1
All	1

Question three

Look at the sub-battlefield operating systems of "Determine actions."

Issue planning guidance
Develop a course of action
Analyze a course of action
Compare a course of action
Select/modify a course of action

Which is most important in the process of synchronization?

Responses:

Issue planning guidance	3
Select/modify course of action	2
Analyze a course of action	2
Develop a course of action	1
None is more important	1

Question four

Consider the following:

IPB process - develop event and decision support template.

Staff planning process - wargame courses of action.

Which is most important in the process of synchronization?

Responses:

Wargame courses of action	4
IPB process	3
Both	2

Question five

Look at the sub-battlefield operating system of "determine action."

Issue planning guidance
Develop a course of action
Analyze a course of action
Compare a course of action
Select/modify a course of action

Which is most important to synchronization in relation to time available for the staff planning process?

Responses:

Issue planning guidance	3
Analyze a course of action	3
Select a course of action	1
All essential	1
Develop a course of action	1

Question six

Consider the intelligence preparation of the battlefield products.

Doctrinal template
Situation template
Combined obstacle overlay
Event template
Decision support template

Which is most important in the process of synchronization?

Responses:

Decision support template	5
Situation template	2
Doctrinal template	1
All important	1

Question seven

Consider decision support templating. Of the battalion task force battle staff, who must participate in the decision support templating?

CDR	XO
S1	S2
S3	S4
FSO	ENG
ADO	CHEM
CESO	ALO

Responses from each survey member:

	CDR	XO	S1	S2	S3	S4	FSO	ENG	ADO	CHEM	CESO	ALO
Member 1	X	X	X		X		X	X		X	X	X
2				X	X		X	X				
3	X	X		X	X		X	X		X		X
4	X	X	X	X	X	X	X	X	X	X	X	X
5	X				X		X	X				X
6	X	X		X	X		X	X		X		X
7				X								
8		X		X	X	X	X	X	X	X	X	X
9	X	X	X	X	X	X	X	X	X	X	X	X

Question eight

Consider event templating. Of the battalion task force battle staff, who must participate in event templating? Use the list of staff officers in question 7.

Responses from each survey member:

	CDR	XO	S1	S2	S3	S4	FSO	ENG	ADO	CHEM	CESO	ALO
Member 1	All if time available, otherwise CDR, S2, S3.											
2	X			X	X							
3				X								
4				X	X							
5	X			X	X							
6				X	X		X	X				X
7	X	X	X	X	X	X	X	X	X	X	X	X
8				X	X		X	X				
9				X	X			X		X		

Question nine

How important is a thorough knowledge of the operating capabilities of the equipment in a task force to synchronization? Consider assigned and attached elements.

Responses. All survey members felt that thorough knowledge was important.

How can you know when, where, and how to best use it in conjunction with other systems?

Must understand what a system can not do. Will not assign an impossible task.

How else can you synchronize?

The better a leader knows his equipment, the better he can synchronize.

May commit to a course of action you cannot support otherwise.

Each member of the staff should bring this kind of expertise with him.

Question ten

How important is a thorough knowledge of the operating capabilities and doctrine of the enemy to synchronization?

Responses. All survey members felt that a thorough knowledge of the enemy is important. Below are examples of answers:

Essential to anticipate possibilities, react to vulnerabilities.

Know when to counter enemy actions and with what (system).

More you know, the better you can synchronize. Anticipate, calculate, assume risk.

When you waltz with someone, you need to know how well they dance.

If I can't predict with some level of certainty, I can't synchronize effectively.

Question eleven

If you have other thoughts you believe are important to battalion task force synchronization, please use the space below to briefly explain.

Responses. Three survey members responded.

Synchronization is a product. One of four AirLand Battle tenets, not more important that the others. Its a product, not a process.

The person trying to understand and practice synchronization needs to focus more on knowing all the parts and their relationship, than focusing on "most important."

True synchronization takes place at DIV/BDE level. When we talk of synchronization at the BN level, we need to realize that the BN CDR owns very little capability to allocate resources.

Questionnaire Number Two

Questionnaire number two required narrative answers. This section will present the main points of each member.

Question one

Responses to the first survey were unanimous concerning technical proficiency. All respondents stated that a thorough knowledge of friendly and enemy operating capabilities and doctrine was very important.

What can a commander do at the unit level to achieve an adequate level of technical proficiency in himself and his staff?

What should the Army do to training battalion staff officers to achieve adequate technical proficiency? Where should this training be done?

Responses:

Practice the staff planning process. Ruthlessly execute the unit TACSOP. Use low overhead training programs for staffs.

Set training time aside like OPD classes. Practice the procedures.

Conduct staff exercises in the field. Use CPX drills under CTC conditions. The turnover rate defeats a high staff proficiency in an 18 month evaluation cycle.

Use OPD and directed self study. Have an awareness of the problem. Officer training is a continuous process.

Set standards and enforce them. Use CAS3, Phase I and OPD.

Question two

What limits the commander and his staff from achieving a high level of technical proficiency? Consider the following:

Taskings from higher headquarters
Personnel turbulence in the staff
Lack of unit staff standard operating procedures
Inexperienced staff officers
Inability to identify training requirements
Conflicts with supporting units (ARTY, ENG, ADA, ALO)
Administrative requirements

Responses:

Identify staff training as a training goal. Train 2, 3 people deep in each section.

Cut distractors. These are excuses. All are solvable.

Focus on individual skill to build collective proficiency. Examine collective training weaknesses for individual training weaknesses or a lack of a system.

Enforce units standards. Inability to identify the training requirement.

Emphasize staff training.

Question three

Staff integrated IPB: The active participation of the entire battalion task force staff in the preparation of IPB products.

Your responses to questions concerning intelligence preparation of the battlefield (IPB) underscored the importance of staff integration. What can the commander do to insure a staff integrated IPB?

Responses:

Conduct TACSOP training. Understand the duties and staff interaction. Practice decision making process.

Commander involvement. TACSOP should cover the IPB process and who participates. Practice the procedures.

Walk through exercises, and learn how to integrate.

The commander sets standards for staff involvement and enforces them.

Question four

What limits the capability of the commander and his staff from achieving a staff integrated IPB? Consider the following:

Staff inexperience
Inadequate knowledge of the IPB process
Inadequate knowledge of the staff planning process
Insufficient staff training time
Inadequate technical proficiency

Responses:

Train, practice to overcome inexperience. Study to understand IPB. Training and practice staff planning. Make time to train.

Inadequate IPB knowledge, staff planning, technical skill can all be overcome by training.

More training time. Train subordinate staff members.

Question five

You indicated that IPB and its products and the staff planning process are closely interrelated. Synchronization depends on these two processes. How should IPB and the staff planning process interact to achieve synchronization?

Responses:

Train staff interaction.

Follow the staff planning process. Use the entire staff.

The IPB products aids plan development. Staff process includes development of IPB products and information requirements. A chicken and egg analogy.

Question six

In answering command and control questions, you said that acquiring information and issuing planning guidance are critical to synchronization.

What does issuing planning guidance to to make acquiring information important to synchronization?

How do these actions help the commander and staff sort through the information available to focus on intelligence requirements that support the plan?

Responses:

Understanding higher headquarters' intent and essential tasks, the commander focuses on key information. Practice is key to identifying intelligence requirements.

Planning guidance sets priorities on what to look for thus assigns assets to support the commander's intent. Acquiring information helps assign forces and focus total unit energy on the objective.

Focuses on what's important. Staff officer can develop "what if" situations.

Defines the problem realistically. Everyone understands the commanders' intent.

Identifies the commander's critical information requirements. More information available, the better synchronization will be.

Question seven

The commander expresses his concept with his intent embedded when he issues his planning guidance. What can the commander do to insure that his concept is understood by his staff and subordinate commanders?

Responses:

Ask for briefbacks, in progress reviews.

Several iterations of wargaming. Takes a lot of time.

Have the staff draw the concept on the map graphically to see if it meets the commander's intent.

Commander expresses intent when he makes a decision. Clearly articulate intent and concept. He must monitor plan development, be available, require feedback.

Question eight

What limits the commanders ability to express his concept and insure it is understood?

Responses:

Technical and tactical incompetences. Inability to speak and write clearly. Incomplete visualization, poor wargaming. Too complicated and detailed guidance.

Communication skills, indecision, changing situation.

Lack of understanding of doctrine, techniques, tactics, and procedures, and the enemy. Inability to visualize the battlefield as he intends it to be through his plan/concept.

Inadequate guidance from higher headquarters. Poor understanding of higher guidance. Lack of time.

Question nine

What role should a clear understanding of doctrine play in preparing the commander and his staff to achieve synchronization? What limits the commander and staff understanding of doctrine?

Responses:

Doctrine is the foundation. Experience, school, study, motivation, simplicity, and time build on this foundation.

Makes staffs act in predictable ways.

Enables best synchronization of the BOS. Limited by training, standardized doctrine, infrequent or no review of tactical doctrine.

Success at any level is not possible without it. Limited by education and training.

Basis of how to accomplish missions. Limited by study, higher headquarters interpretations, thinking you know better, too doctrinally bound.

Question ten

These questions have concentrated on actions that prepare the commander and his staff for the task of achieving synchronization. Please use the space below to express any additional thoughts on "preparing to synchronize." Comment on the interaction of:

Technical proficiency
Staff integrated IPB
Commanders concept
Clear understanding of doctrine

Responses:

Key is training. Understand doctrine, build technical proficiency, and staff integrated IPB.

Commander and staff interaction must focus on these four factors. Failure to give measure to all as appropriate results in a flawed plan. "A stupid enemy is not a course of action, nor a screening criteria."

Synchronization takes place first in the commander's mind.

The commander ties together the BOS with his definition of how he will fight. The staff must know their role and bring in expertise.

Discussion Introduction

This section follows the outline of combined arms skill, staff integrated IPB, and commander's concept.

Combined Arms Skill

The panel said that combined arms skill is critical to synchronization. These skills made synchronized action possible, preventing wasted use of resources.

The panel also agreed upon the importance of knowledge of enemy capabilities. This knowledge helps the commander identify options, react to opportunities, and counter enemy action. Understanding the enemy enhances the ability to anticipate, calculate, and assume risk. As one member put it, "When you waltz with someone, you need to know how well they dance." To synchronize plans, the commander and staff need to know the enemy.

The second questionnaire asked how the commander can get the skills required for synchronization. The panel said training is the key to technical skill. The commander builds on formal training with a unit program. To improve individual skills, an officer professional development program is important. This program can include directed

self-study, CAS3 Phase I program of instruction, Military Qualification Standards (MQS), and a professional reading program.

Training in collective skills is also important. The commander must train his staff to an identified standard. Also, the unit needs a tactical standard operating procedure. Staff training includes command post exercises, field training exercises, and computer assisted training. One panel member pointed out that staff training must be ongoing. Personnel changes will degrade staff skill over an eighteen month training cycle.

The panel believed that combined arms skill must have training priority. Training time for the staff is critical to high performance. Through repetitive, realistic training the commander and staff can develop skills needed to synchronize plans.

Analysis

Through their answers, the panel confirmed the importance of combined arms skill to synchronization.

Having a high level of individual and collective skills seems obvious. Being so obvious, however, often leads to neglect. In the myriad of daily tasks, staff training time slips to a low priority. One member admitted to this problem as a battalion commander. He focused on his

junior commanders and units, neglecting his staff. Looking back, this former commander would devote time and attention to his staff.

To synchronize, the commander and staff must know friendly and enemy capabilities. The time-distance factors of these capabilities is essential to sychronized planning. The panel had a unanimous opinion on the importance of this knowledge.

The commander and staff must set standard operating procedures and then train them. The staff training program must be continuous to offset personnel changes. Part of this program is the TACSOP. It is an important source for training. Also, the TACSOP changes to take advantage of individual strengths and weaknesses, personality of the commander, and the mission of the unit. Following this program plays an important role in preparing for synchronized operations.

Staff Integrated Intelligence Preparation of the Battlefield

In the panel's opinion, a staff integrated IPB is important to synchronized plans.

In discussing staff integrated IPB, the panel covered several items. First, set a workable tactical standard operating procedure (TACSOP). The panel believed a good TACSOP describes staff duties, highlighting how staff sections share information.

The staff training program would include order drills, command post exercises, and field training exercises. One member stressed the importance of walking through staff procedures. As staff skills improve, the training scenario becomes more difficult.

The panel members made two more critical points. First, the commander must set standards and enforce them. Second, the commander must get involved. The commander must actively participate in the staff training program. A thoughtfully executed training program will develop and maintain the skills of a staff integrated IPB.

The members did not list any factors that prevent a staff integrated IPB. The questionnaire asked them to consider:

Staff inexperience.

Inadequate knowledge of the IPB process.

Inadequate knowledge of the staff planning process.

Insufficient technical proficiency.

The panel said training and command involvement can overcome these factors. The commander must assess his staff to identify their weaknesses. Through his personal involvement, the commander devotes time to staff training.

The panel stressed the staff planning process. They believed it's best to use the staff procedures outlined in FM 101-5, Staff Organization and Operations. They stressed the staff must know how IPB fits in the staff planning process. One member likened this link to a chicken and egg analogy. For example, the staff planning process identifies information requirements. The IPB process helps collect this information. IPB then uses this data in its products. These products aid plan development. The panel said practice insures the staff understands this relationship.

Analysis

Two points emerge from the survey results. First, a staff integrated IPB is essential for effective synchronization. This requires the entire staff to understand IPB. Second, the staff needs a complete understanding of the planning process.

A staff integrated IPB is critical for synchronization. The staff must contribute to all IPB products. The critical IPB product for staff integration is the decision support template (DST). When the task force staff is involved in making the DST, resources do not get overlooked. The DST highlights opportunities and options for the commander. It also shows when he must take decisive action. The DST focuses the intelligence collection and reconnaissance and surveillance plan.

IPB cannot be the exclusive task of the S2. With better knowledge of IPB, information sharing would improve among the staff. Each staff member has information that the others need to complete estimates and plans.

Related to IPB is thorough understanding of the staff planning process. The staff planning process aids development of estimates and plans. However, some units are reluctant to use the formal process. Training can overcome this reluctance. As staff members learn set procedures, the planning process will become responsive.

Commander's concept

The panel listed two activities that start from the commander's concept; issuing planning guidance and gathering information.

The panel said the commander's planning guidance focuses information gathering. Planning guidance sets priorities, using assets to support the commander's intent. The commander's concept helps assign forces and focus the unit's total energy on the objective.

The panel described how the commander can insure the staff understands his intent. They recommended briefbacks and rehearsals. In another technique, the staff sketched the commander's concept. The commander then checked if it met his intent. Another technique was several wargaming routines. Wargaming continued until everyone understood the

intent. The panel also recommended commander involvement. The commander must be available to answer questions. He must check plan development to insure it meets his intent.

Poor communication skills also limit the commander's ability to express his concept. An incomplete vision of the battlefield was an additional factor. One member pointed out that vague guidance from higher headquarters would affect the concept. Incompetence and complicated guidance would also hurt the commander's concept.

Analysis

The panel's answers show the commander's concept is critical to the synchronizing process. The commander's concept focuses the staff on how the plan must develop. The concept identifies and prioritizes information requirements. Knowing when and where to look for information is key to synchronized planning. With timely information, the commander can act at the moment to insure synchronized action. The commander's concept allows the staff to develop "what if" situations. Solving these situations identifies new information needs and decision points. Through this procedure, the plan becomes synchronized.

The commander must make his intent understood. The synchronization process begins in the commander's thoughts. He must express these thoughts to his staff. Equally important is how the staff receives the commander's intent. Their competence, familiarity with the commander, and

experience will affect their understanding. Procedures drilled in repetitive training can strengthen this link between the commander and staff.

The role of doctrine

The panel said doctrine plays a critical role in the synchronizing process. It is the basis of how to accomplish missions. Success at any level is not possible without understanding doctrine.

Panel conclusions

The panel stressed the commander and his staff must focus on these four factors (Chart 4-1).

CHART 4-1

Combined arms skill

Staff Integrated IPB

Commander's concept

Understanding doctrine

Failure in any area results in flawed, unsynchronized plans. Proper use of these factors requires training, study of doctrine, technical skills, and staff integrated IPB. The commander must set incentives for study, training, and preparation. The commander in his concept ties the battlefield operating systems with how he will fight. The staff must then understand their role and use their

expertise. Thorough preparation in technical skill, staff integrated IPB, the commander's concept, and the use of doctrine is critical to synchronization.

Relationship of findings to the research question

The survey results confirm the conclusions drawn from the literature review. This thesis set out to find preparations the battalion task force commander and staff can make to synchronize their operations. Chart 4-2 lists these actions. A detailed knowledge of how to apply doctrine forms the base for these three factors.

CHART 4-2

Combined arms skill

Staff integrated IPB

The commander's concept

Summary

At this point it's clear that the three areas in Chart 4-2 are critical to synchronized activities. This information alone will not help the task force. Units must take action to develop and improve these skills. The last chapter recommends training the command and staff activities for synchronization.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

The battalion commander and staff must train three areas to prepare to synchronize plans. First, combined arms skills need improvement. Next, the entire staff needs IPB and planning procedures training to improve integrated action. And last, both the commander and staff need training to improve timeliness, content, and use of the commander's concept. These skills will increase the commander's and staff's ability, preparing them to synchronize their plans. This conclusion answers the primary research question. To improve commander and staff skills in these three areas, this study makes recommendations for training.

Recommendations for training

Training recommendations cover two areas. The first is individual training. This training is aimed at improving the combined arms skill of the officers. The second type of training is collective training. Collective training builds on individual skills, focusing on commander and staff procedures in synchronizing plans.

Individual training

The Officer professional development (OPD) program is the officer individual training program. OPD classes on friendly and enemy capabilities will improve technical skills. The officers of support units attached to the

battalion can conduct classes for other battalion officers on their branch specific equipment capabilities. All seven operating systems, friendly and enemy, must get training attention in the OPD classes. To help synchronize planning, these classes should focus on time and distance factors. For example, an armor officer must know range, engagement time, and mobility of an air defense weapon as well as his own armor capabilities.

Every officer in the battalion must receive this training. Companies receive attachments to perform their missions. Consequently, company officers must know how to use them efficiently. Also, the platoon leader is a potential battalion staff officer, responsible for sychronizing activities.

The OPD training program must also include training on the TACSOP and doctrine. The unit TACSOP and doctrine form the planning base for synchronized battalion plans. Finally, the OPD program should have training on giving and using the commanders' intent. Specific exercises should be developed and used for this purpose.

In addition to OPD, other training methods are available. Phase I, CAS3 program of instruction trains basic staff skills. Military Qualification Standards (MQS) for officers covers subjects that could address specific training weaknesses. Finally, soldier and common skill manuals for all skill levels provide a source for individual

training. On the same line, operator manuals and field manuals are a source for equipment capabilities. Another important part of the OPD program is standards and evaluation. The commander sets the standards and insures that the officers are tested. The commander must tie completion of this program with important incentives. Used like this, the program can become the officer qualification program. Standards and evaluation will help sustain the skill of the officers.

Sustaining technical skill is also important. As already mentioned, the individual training program must include regular testing. As an example, officers would have to retest every six months. This would identify areas needing retraining. Due to transfers, officers will be at different levels of training in the program. Therefore, the program will require careful management to insure all officers are trained.

Collective training

Collective training has many elements. It will include updating the TACSOP, training staff procedures, assessment, and repetitive training.

Starting the staff training program must include a TACSOP review. The battalion staff and subordinate commanders provide input that the S3 combines into a working TACSOP. It then serves as one source for training. As

staff skills improve and drills develop, the TACSOP changes to reflect unit procedures. A TACSOP review after every training exercise captures lessons learned.

The staff training program must focus on technical skills, intelligence preparation of the battlefield process, and the staff planning process. The integration of staff activities makes up a large part of this training. These topics provide the core of the training program. Key elements of the staff training process are repetition, more difficult conditions as skills improve, assessment, and certification.

Repetitive training increases the commander's and staff's skill in the staff planning process. As the staff gets faster in the formal planning process, the commander will not feel compelled to shortcut the process. Shortcuts hurt the synchronization of the task force plan. The commander also gets better at providing his concept and intent. As a result, the staff begins to better understand him. The staff will "get into his mind," better synchronizing the plan to satisfy the commander's intent.

As the commander and staff improve, exercise conditions get more difficult. The commander limits time, resources, and terrain. These conditions pose new problems for synchronizing action. Solutions get included in the unit TACSOP.

Like individual training, regular assessment of staff skills is important to sustain skill. Personnel changes will affect the efficiency of the staff. Therefore, staff exercises must change as key members leave and replacements train. Another good procedure is to insure all staff section members can perform the duties of the man above and below him. A good TACSOP is invaluable in training new personnel. The TACSOP is also valuable in meeting other changes in the unit.

Other situations cause changes in the staff training program. A new mission, or change in task organization, enemy, or equipment will affect the unit. Accordingly, the staff weighs the impact of these changes on the TACSOP. A new program of staff exercises identifies training needs and TACSOP changes.

Staff Training Techniques

Several training techniques are available for commander and staff training which vary in cost. These exercises include command post exercises, tactical exercises without troops, and field training exercises.

There are several low cost command post exercises (CPX) available. A computer version of the First Battle-Battalion to Corps exercise is an example. This type of exercise is easily done with battalion resources. A unit should conduct a CPX monthly. The CPX provides preparation for more extensive training exercises.

A tactical exercise without troops (TEWT) would train the commander, the task force staff, and subordinate commanders. In a TEWT, the battalion task force deploys to an exercise area with unit commanders. The units commander in their vehicle represent their units and respond to the task force commander and staff. Done quarterly, TEWTs require more resources, however, provide more realism. Time and distance factors are more realistic. Also, feedback from the commanders improves the training.

Field training exercises provide realistic training for the staff. It's also the most expensive. A battalion may conduct two major field training exercises a year. Conducted as a mission, the FTX trains the staff from start to finish.

Important points for training are repetition, tougher conditions as skill improves, regular assessment, and certification. These sharpen the commander and staff skills, making them better able to achieve synchronized plans.

General recommendations

The Tactical Commander Development Program has produced useful material on synchronization. TCDP battle books combines data on the battlefield operating systems in one document. Published as a manual, this book would be an invaluable planning and training source.

TCDP has also developed a synchronization methodology and planning matrix that is very useful. The synchronization methodology lays out the steps to a synchronized plan. Future battalion commanders get this training during the Pre-command Course. How well these officers pass the information to their units is unknown. Sending this information to the field will increase knowledge of the synchronization process. The battalion executive officer or S3 could then develop their staff's synchronizing skills.

The Army should publish the battle book and methodology as a training circular on synchronization. This circular would include the staff planning process, intelligence preparation of the battlefield, and a model training program.

Recommendations for further research

Further research should examine the relationship among the tenets of AirLand battle doctrine. This research would see how synchronization relates to agility, depth, and initiative. Now, training center reports focus on failure to synchronize. Does a failure to synchronize inhibit the other tenets? Does outstanding agility, depth, and initiative make up for failure to synchronize? Learning the relationships among AirLand battle tenets could clear up some of the ambiguity.

Research should study effects of brigade synchronization on the task force. Brigade synchronizes much of the task force plan. The TCDP program now includes brigade operations. As a result, more information on brigade planning on battalion synchronization will develop.

Along the same lines, research should look at company team synchronization. Company actions directly effect battalion plans. Therefore, company actions could help or hurt battalion synchronization.

Task force staff manning is worthy of research. Often battalion staff officers are lieutenants that have not attended advanced courses or CAS3. Captains completing command frequently go to higher headquarters assignments. This robs the task force of valuable experience for use on staff.

Summary

Synchronizing skill is one of many deserving command emphasis. Any area of the battalion benefits from command emphasis and training. Few, however are as important as synchronization to mission accomplishment. Synchronization focuses the battalion's capabilities on winning the battle. Synchronization is at the heart of our combined arms doctrine. A synchronized plan applies overwhelming combat power at the decisive time and place on the battlefield.

APPENDIX A

BATTALION TASK FORCE PLANNING FACTORS

Planning factors for the Maneuver Operating System.

MOVEMENT RATES

(TIME IN MINUTES)

DISTANCE / RATE OF MARCH	1000	2000	3000	4000	5000	6000	7000	8000	9000	10,000
60KM/HR	1	2	3	4	5	6	7	8	9	10
50KM/HR	1.2	2.4	3.6	4.8	6	7.2	8.4	9.6	10.8	12
40KM/HR	1.5	3	4.5	6	7.5	9	10.5	12	13.5	15
30KM/HR	2	4	6	8	10	12	14	16	18	20
25KM/HR	2.4	4.8	7.2	9.6	12	14.4	16.8	19.2	21.6	24
20KM/HR	3	6	9	12	15	18	21	24	27	30
15KM/HR	4	8	12	16	20	24	28	32	36	40
10KM/HR	6	12	18	24	30	36	42	48	54	60
5KM/HR	12	24	36	48	60	72	84	96	108	120

Planning factors for the Fire Support Operating System.

FIELD ARTILLERY TIME STANDARDS

- OCCUPATION TIMES
  M109 BATTERY----- 6-8 MINUTES
  M110 BATTERY----- 9-11 MINUTES
- FIRE MISSION STANDARDS FOR BATTALION MASS
  --ALL TIMES BASED ON TACFIRE STANDARD
- HIGH ANGLE ADJUST WITH FORWARD OBSERVER-----8:35
  BATTALION FIRE FOR EFFECT----------2:40
  BATTALION MASS LOW ANGLE ADJUST WITH RADAR--3:40
  BATTALION MASS LOW ANGLE ADJUST WITH FO ----7:20
  PRIORITY TARGET----------1:15
  IMMEDIATE SUPPRESSION----------1:45
- IMMEDIATE SMOKE WITH PLATOON OR BATTERY
  FFE WITH WHITE PHOSPHORUS----------1:45
  AREA ADJUST WITH QUICK SMOKE----------7:50
  LOW ANGLE ADJUST WITH AERIAL OBSERVER------7:00
- COPPERHEAD EMPLOYMENT
  TARGET OF OPPORTUNITY----------3:25

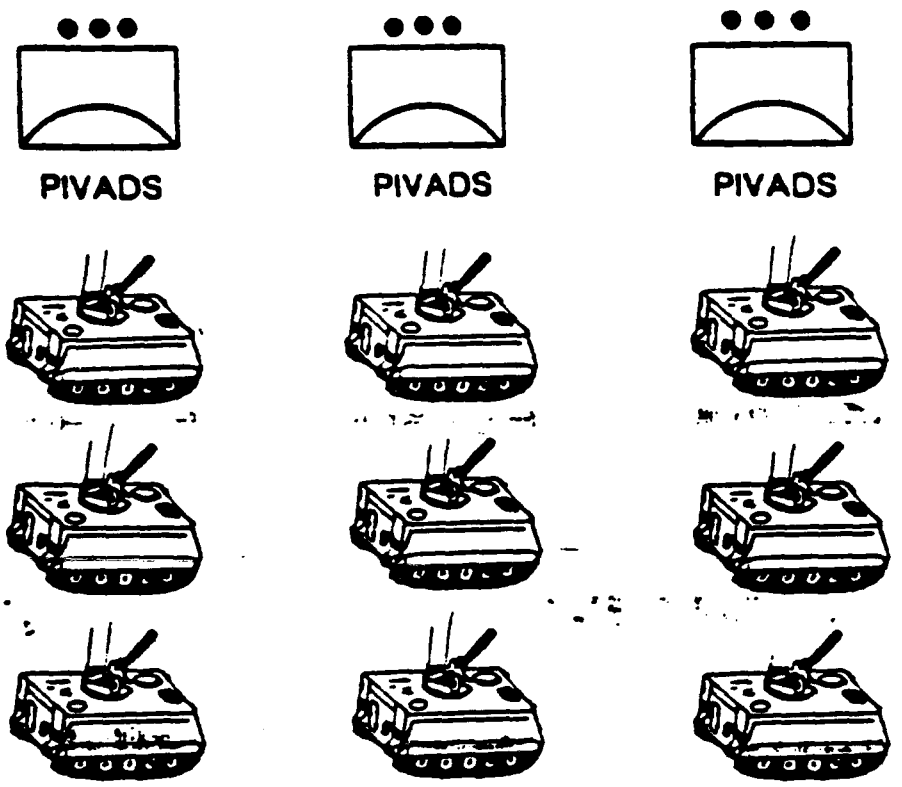
Planning factors for the Mobility, Countermobility, Survivability Operating System.

COUNTERMOBILITY

STNDRD OBST	CAPABILITY	HAUL ELMNT	EMPL ELMNT	TIME	REMARKS
[illegible]	250M X 100M	(1.5) 2 1/2T TK	ENGR PLT INF PLT	1.0 HR 1.5 HR	AT MINES W/ 84 U SHAPED PICKETS/24 MINES SIGNS
MINEFIELD 100	250M X 300M	(3) 2 1/2T TK	ENGR PLT INF PLT	2 HR 3 HR	DOUBLE THE ABOVE ITEMS & PLACE A 100M SPACE IN THE MINEFIELDS
POINT MINEFLD (MFB)	100M X 100M	(1) 2 1/2T TK	ENGR PLT	2 HR	12AT/8APF/1SAPS MINES
MINEFIELD PLUS IOE & BURIED AP	250M X 300M 1-13-2-2	—		3 HR	SAME AS MFB PLUS 48 M21/54 M14/32 M16
HASTY RD CRTR	40'ROWY	(2) 2 1/2T TK	ENGR SOD	1.5 HR	40LB TNT/8 16LB SHAPE CHGS/6 40LB CRATERING CHGS 1000' DET CORD
BRIDGE DEMO		(15) 2 1/2T TK	ENGR SOD	4 HR	460LB TNT OR 350 BLKS C-4 2000' DET CORD
ABATIS	75 M DEEP	(1) 2 1/2T TK	ENGR SOD	2 HR	330LB TNT/2000' DET CORD OR 1 CHAINSAW
TRPL STNDRD CONCERTINA	300M	(1) 21/2T TK	INF PLT	1.5 HR	4 SHT PKTS 100 LG PKTS 4 RLS BRB WIRE. 56 RLS CONCERTINA
CONCERTINA ROADBLOCK	STOP TRACKS	(25) 2 1/2T TK	ENGR SOD INF SOD	2 HR 3 HR	33 RLS CONCERTINA 99 LG PKTS/66 SHT PKTS/ 3 RLS BRB WIRE

*OTHER CALCULATIONS
1 101-10-1 SEC III Pt-17
2 FM 71-1 APP C

Planning factors for the Air Defense Operating System.



Each Vulcan includes a Stinger gunner with 2 Stingers.

Planning factors for the Combat Service Support Operating System.

TANK BATTALION BULK CLASS III CAPABILITY

Assets	Load/vehicle	Total fuel	Nozzles	GPM/nozzle
12 HEMTTS	2,500	30,000	2 Per	150

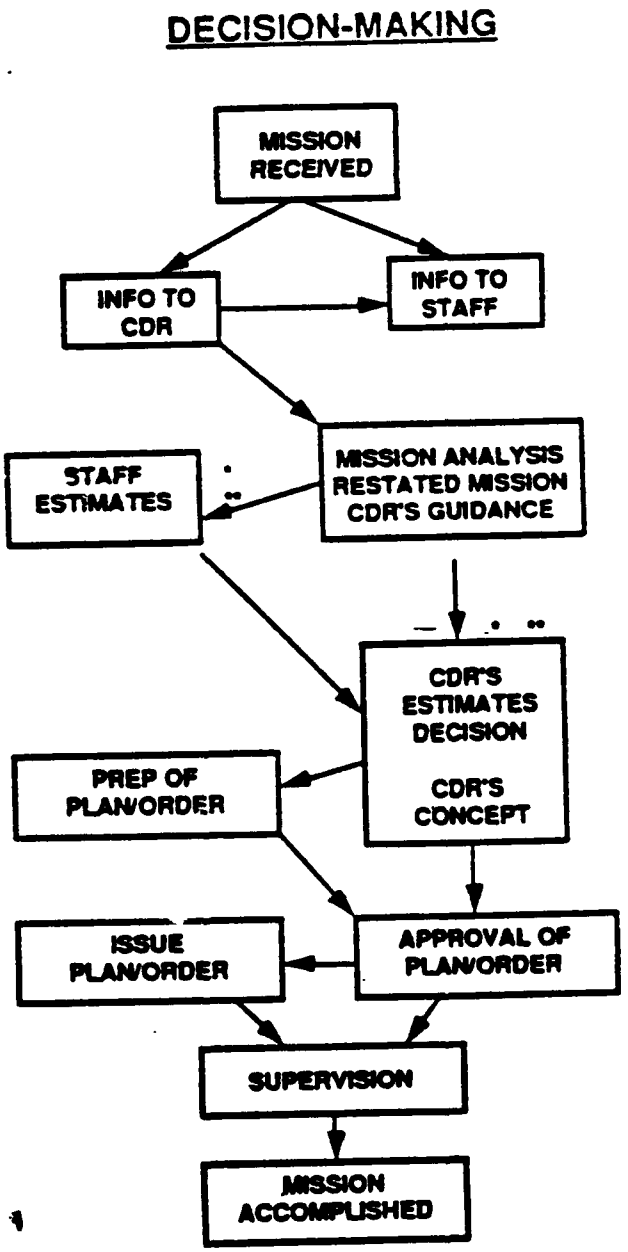
1 co	Fuel Cap/100%	Consumption rate	Total fuel req/co
14 tanks	520 gal	50 GPH (approx.)	7,280 gal

Hours of operation to produce percentage change

Hours	1	2	3	4	5	6	7	8	9	10
Gal	700	1,400	2,100	2,888	3,500	4,200	4,900	5,600	6,300	7,000
% remain	91	80	70	60	50	40	30	20	10	1

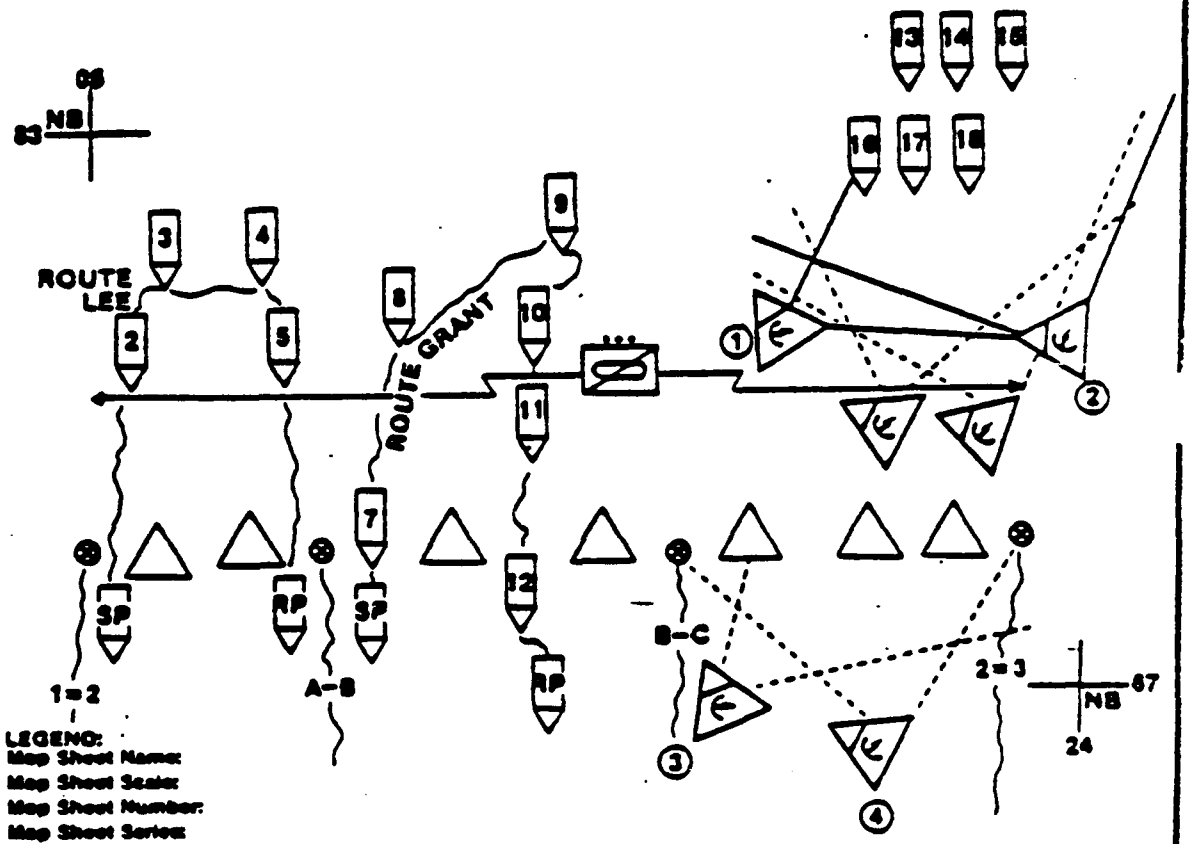
Number of HEMMTS required	1	2	3

Planning factors for the Command and Control Operating System.



Planning factors for the Intelligence Operating System.

RECONNAISSANCE AND SURVEILLANCE OVERLAY



LEGEND:
Map Sheet Name:
Map Sheet Scale:
Map Sheet Number:
Map Sheet Series:
Prepared By:

Instructions:

GSR: Est positions 1 and 2 NLT 1800. Est positions 3 and 4 on order. Target: En recon/MRB (BMP with T-62) moving south along avenues of approach vic CP 13, 14, and 15 initially, then CP 16, 17, and 18 respectively. Coordinate withdrawal routes with Tm C and scout platoon leader.

Scouts: Est forward screen NLT 1800. Target: Enemy recon units.

Patrols: Tm A—6 man patrol SP NLT 2100. Coordinate Route Lee with scout platoon leader. Target: Location of enemy MR platoons vic CP 3 and CP 4. Tm B—5 man patrol SP NLT 2100. Coordinate Route Grant with scout platoon leader. Target: Location of enemy MR platoons vic CP 8 and CP 9.

LP or OP: All teams establish LP or OP NLT 2200. Target: Enemy recon.

Reports: Report on the bn ops or intel net using TACREP format. Patrol leaders report to BTF S2 NLT one hour upon completion of patrol for debriefing; report combat info on bn ops or intel net. Negative report required hourly.

DISTRIBUTION: Tms A, B, C: Scout Platoon; FSO; S2; GSR Tms; Engineer PLT LDR; Bde S2.

APPENDIX B

DELPHI PROCESS DOCUMENTATION

SURVEY NUMBER ONE

Thank you for agreeing to participate in an analysis of synchronization at the battalion task force level. Participation is strictly voluntary, and I appreciate your help. Your insights will be most helpful in identifying critical aspects of this part of our doctrine.

Specifically, you will help identify the critical combat activities of the battalion commander and his battle staff. These people must perform specific, critical, activities in order to synchronize the task force plan.

The results will be used as input into a Master of Military Arts and Science thesis. As such, it will become part of the professional data base. Hopefully, it may help units in the field solve this problem.

Attached is the first of a series of questionnaires designed to seek your assistance in identifying the critical combat activities for synchronization. It will take about 30 minutes to complete. Please complete the enclosed questionnaire prior to _____. Please return the survey to _____. Your responses will be analyzed and a second questionnaire will soon follow.

Thank you for your help.

JAMES E. ZANOL
Captain, Armor

SURVEY INSTRUMENT

RANK_____ SPECIALITY_____

CURRENT POSITION_____

SIZE OF LAST UNIT COMMANDED_____

HAVE YOU PARTICIPATED IN A NTC ROTATION?_____

DID YOU PARTICIPATE IN A NTC ROTATION IN THIS POSITION?_____

IF NO, WHAT WAS YOU DUTY POSITION_____

INSTRUCTIONS

This instrument requires you to consider various ideas and concepts concerning synchronization. Under the left had column put down the item you believe is most important to the process of synchronization. In the right hand column, write the reason for your answer. It is very important that you give the reason. Be brief, but explain your answer. There are 11 questions, pages are printed back to back.

1. Consider the seven battlefield operating systems:

Maneuver
Fire support
Intelligence
Command and control
Air defense
Mobility, countermobility, survivability
Combat service support

Our doctrine states that the battlefield operating systems must be synchronized in time, space, and purpose. Which battlefield operating system includes synchronization as a process?

BOS REASON

2. Look at the outline of the command and control battlefield operating system.

Acquire/communicate information
Assess situations
Determine actions
Direct and lead subordinates

Which action is most important in the process of synchronization?

ACTION REASON

3. Look at the sub-battlefield operating systems of "Determine actions."

Issue planning guidance
Develop a course of action
Analyze a course of action
Compare a course of action
Select/modify a course of action

Which is most important in the process of synchronization?

ACTION REASON

4. Consider the following:

IPB process - develop event and decision support

template.

Staff planning process - wargame courses of action

Which is most important in the process of synchronization?

ACTION REASON

5. Look at the sub-battlefield operating system of "determine action."

Issue planning guidance
Develop a course of action
Analyze a course of action
Compare a course of action
Select/modify a course of action

Which is most important to synchronization in relation to time available for the staff planning process?

ACTION REASON

6. Consider the intelligence preparation of the battlefield products.

Doctrinal template
Situation template
Combined obstacle overlay
Event template
Decision support template

Which is most important in the process of synchronization

ACTION REASON

7. Consider decision support templating. Of the battalion task force staff, who must participate in decision support templating?

CDR	XO
S1	S2
S3	S4
FSO	ENG
ADA	CHEM
CESO	ALO

OFFICER REASON

8. Consider event templating. Of the battalion task force battle staff, who must participate in event templating? Use the list of staff officers in question 7.

OFFICER REASON

9. How important is a thorough knowledge of the operating capabilities of the equipment in a task force to synchronization? Consider assigned and attached elements.

10. How important is a thorough knowledge of the operating capabilities and doctrine of the enemy to synchronization?

11. If you have other thoughts you believe are important to battalion task force synchronization, please use the space below to briefly explain.

SYNCHRONIZATION SURVEY NUMBER 2

Thank you again for agreeing to participate in this survey and for your response to Questionnaire #1. Your feedback was extremely useful and formed the basis for this questionnaire.

This question narrows in focus beyond the "process or product" of synchronization. The questions on this questionnaire ask you to consider what a commander and his staff must do to prepare to achieve synchronization. The focus is on three areas:

Technical proficiency
Staff integrated IPB
Commander's concept

Please complete the enclosed questionnaire prior to _____. Please return the questionnaire to MRS. GODFREY, Rm 65U. Your responses will be analyzed to determine if a third questionnaire is required.

Thanks again for your help.

JAMES E. ZANOL
Captain, Armor
CGSC Section 12D
Home Phone 682-5376

TECHNICAL PROFICIENCY

1. Responses to the first survey were unanimous concerning technical proficiency. All respondents stated that a thorough knowledge of friendly and enemy operating capabilities and doctrine was very important.

What can a commander do at the unit level to achieve an adequate level of technical proficiency in himself and his staff?

What should the Army do to training battalion staff officers to achieve adequate technical proficiency? Where should this training be done?

TECHNICAL PROFICIENCY

2. What limits the commander and his staff from achieving a high level of technical proficiency? Consider the following:

Taskings from higher headquarters
Personnel turbulence in the staff
Lack of unit staff standard operating procedures
Inexperienced staff officers
Inability to identify training requirements
Conflicts with supporting units (ARTY, ENG, ADA, ALO)
Administrative requirements

Comments:

STAFF INTEGRATED INTELLIGENCE PREPARATION OF THE BATTLEFIELD

Staff integrated IPB: The active participation of the entire battalion task force staff in the preparation of IPB products.

3. Your responses to questions concerning Intelligence Preparation of the Battlefield (IPB) underscored the importance of staff integration.

What can the commander do to insure a staff integrated IPB?

STAFF INTEGRATED INTELLIGENCE PREPARATION OF THE BATTLEFIELD

APPENDIX C

BIBLIOGRAPHY

4. What limits the capability of the commander and his staff from achieving a staff integrated IPB? Consider the following:

Staff inexperience
Inadequate knowledge of the IPB process
Inadequate knowledge of the staff planning process
Insufficient staff training time
Inadequate technical proficiency

Comments:

STAFF INTEGRATED INTELLIGENCE PREPARATION OF THE BATTLEFIELD

5. You indicated that IPB and its products and the staff planning process are closely interrelated. Synchronization depends on these two processes.

How should IPB and the staff planning process interact to achieve synchronization?

COMMANDER'S CONCEPT

6. In answering command and control questions, you said that acquiring information and issuing planning guidance are critical to synchronization.

What does issuing planning guidance do to make acquiring information important to synchronization?

How do these actions help the commander and staff sort through the information available to focus on intelligence requirements that support the plan?

Additional comments:

COMMANDER'S CONCEPT

7. The commander expresses his concept with his intent embedded when he issues his planning guidance.

What can the commander do to insure that his concept is understood by his staff and subordinate commanders?

COMMANDER'S CONCEPT

8. What limits the commander's ability to express his concept and insure it is understood?

DOCTRINE

9. What role should a clear understanding of doctrine play in preparing the commander and his staff to achieve synchronization?

What limits the commander and staff understanding of doctrine?

CONCLUSION

10. These questions have concentrated on actions that prepare the commander and his staff for the task of achieving synchronization. Please use the space below to express any additional thoughts on "preparing to synchronize."

Comment on the interaction of:

Technical proficiency
Staff integrated IPB
Commander's concept
Clear understanding of doctrine

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APPENDIX D

DISTRIBUTION LIST

1. Combined Arms Research Library
   U.S. Army Command and General Staff College
   Fort Leavenworth, Kansas 66027-6900

2. Defense Technical Information Center
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3. COL Mark Robison
   Center for Army Tactics
   U.S. Army Command and General Staff College
   Fort Leavenworth, Kansas 66027-6900

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